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REMARKS

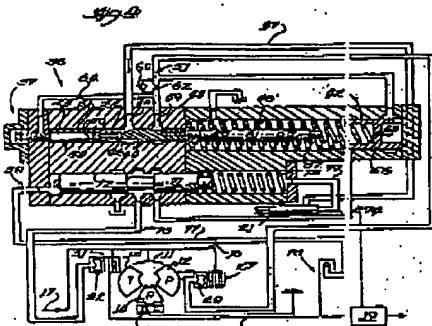
Claims 9-15 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons noted in the official action. The rejected claims are accordingly amended, by the above claim amendments, and the presently pending claims are now believed to particularly point out and distinctly claim the subject matter regarded as the invention, thereby overcoming all of the raised § 112, second paragraph, rejections. The entered claim amendments are directed solely at overcoming the raised indefiniteness rejection(s) and are not directed at distinguishing the present invention from the art of record in this case.

Claims 9-16 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Allen et al. '417 in view of JP '906. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

As the Examiner is aware, in order to properly support an obviousness-type rejection in view of a combination of references under 35 U.S.C. § 103, the references must provide some disclosure, teaching or suggestion which would lead one of ordinary skill in the art to combine them in the manner as suggested by the Examiner. The U.S. Patent Office Board of Appeals has consistently upheld this requirement, "We have studied the references and the manner in which the examiner proposes to combine their teachings but we are unable to find in these references any suggestion that they should or could be combined, absent appellant's disclosure in the present application." Ex Parte Lennox, 144 USPQ 224, 225 (U.S. Patent Office Board of Appeals 1964).

Allen et al. '417 discloses a control system for ensuring the appropriate sequential engagement, as well as the rate of engagement, of the transmission torque converter lock-up clutch and input clutch 27 as shown in Fig. 1 of Allen et al. '417. "In addition to regulating the engagement sequence for the various clutches as discussed above, it is also necessary to closely regulate the rate of engagement for the clutches. . ." Column 4, lines 17-20. More specifically, Allen et al. '417, discloses a clutch control assembly 36 indicated generally at Fig. 4 as shown below, and described at least at column 4, paragraph 31 through column 5, line 42, which discusses the hydraulic actuation and control of the input clutch 27.

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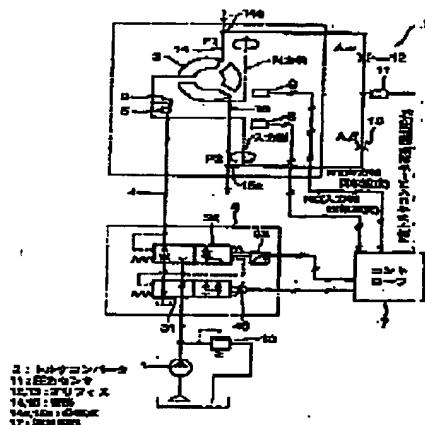
As noted by the Examiner, there is no disclosure, teaching or suggestion in this reference relating to a pressure sensor, much less the specific placement or structural arrangement of such a sensor. Besides the fact that there is no disclosure of a pressure sensor, rather than obtaining and utilizing a pressure of the interior of the torque converter, the upper portion 37 of the clutch control assembly 36 which regulates the operation of the input clutch 27 is actuated according to a pressure in the lock-up clutch 31 as specifically discussed at column 6, lines 34-37: "The rate of pressurization or modulation for the input clutch 27 is regulated by the accumulator means 42 either alone or in combination with the restricted orifice 62". In other words, the modulation of the input clutch 27 in Allen et al. '417 is balanced or controlled according to the lock-up clutch and the associated slide valves and accumulator in the clutch control assembly.

Allen et al. '417 is a completely different system for providing an appropriate actuation pressure to the input clutch which does not contemplate nor apparently need, the pressure sensors as disclosed either in JP '906 or in the present invention. Thus, beyond the fact there is no disclosure, teaching or suggestion of such sensors, their structure or relative function, it is the Applicant's position that this reference teaches away from the use of pressure sensors as in JP '906 and the present invention.

Different from the hydraulic pressure balancing and the accumulator 42 between the lock-up clutch and input clutch of Allen et al. '417, JP '906 relates to an internal pressure detection device for a hydrodynamic torque converter and discloses a sensor 11 for determining a pressure between two points, i.e., between an input line P1 and an output line P2 of the

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torque converter. Observing the English abstract in conjunction with the figure as provided below from JP '906, we note that the sensor 11 is connected to the input line P1 and an output line P2 at junctions 14a and 15a, respectively outside of the torque converter.



In between these hydraulic fluid line junctions 14a and 15a is conventionally situated the hydrodynamic torque converter 2 as seen in the Figure. JP '906 discloses merely obtaining the internal pressure of the converter based on an indirect reading of the pressure differential between the input and output hydraulic lines of the converter.

As discussed in the solution to the problem in JP '906 of providing an internal pressure detection device that is low in cost and high in durability, the solution describes, "A communication port 17 is provided between a junction 14a on a supply pipe supplying fluid and a junction 15a on a discharging pipe discharging fluid. . .". Assuming that this indirectly measured internal pressure of the converter is used to control the input clutch there is no disclosure, teaching or suggestion that such a pressure measurement system would be feasible in conjunction with a clutch control assembly 36 as disclosed by Allen et al '417.

After thorough review of both references the Applicant can find no inherent or express teaching that such a pressure sensor 11 connected between the supply pipe and the discharge pipe of the torque converter could be combined with the clutch control assembly 36 of Allen et al. '417. In fact the two different systems are complete in and of themselves and teach nothing beyond the use of that particular system to actuate the respective clutches. In fact,

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such an input/output pressure detection system as disclosed in JP '906 is arguably not necessary in Allen et al. '417 which states in the Summary of the Invention at Col. 2 lines 7-13, ". . .where modulated operation of the input clutch is desired, the rate of engagement for the input clutch is determined by accumulator means associated with the input clutch control valve as well as a restrictive orifice communicating the input clutch control valve with both the input clutch and the accumulator means". "[I]t is well settled that references may not be combined where there is no suggestion in any of the references that they can be combined to meet the recitations of the claims." United Merchants and Manufacturers, Inc. v. Commissioner of Patents, 139 USPQ 199, 200 (DC, District of Columbia 1963).

Even if these two references could be combined, and such a combination is adamantly disputed by the Applicant, the combination would still fail to disclose, teach or suggest the Applicant's specifically claimed invention. Claim 9 includes the specific feature, "a turbine rotor (4) forms a drive output, and a pressure sensor (12) connected to an inner space of the converter determines the pressure inside the converter housing (1)". This specifically claimed internal pressure directly from the inner space of the converter is necessary to provide the appropriate control of the input clutch.

In fact, the Applicant's claimed invention is intended to specifically overcome indirect measurement of the internal pressure as disclosed in JP '906. This feature of the presently claimed invention is discussed in the Applicant's specification at paragraph 011,

Since the pressure inside the converter housing varies according to the operating conditions of the hydrodynamic torque converter. The clutch can only be controlled with precision if the actuation pressure takes into account the moment-by-moment pressure inside the converter housing. For this purpose, the pressure in the converter housing is measured by a pressure sensor, preferably at a tapping point close to the piston of the clutch actuation device.

In other words, the Applicant's claimed pressure sensor determines the pressure directly inside the converter housing, and the actuation pressure of the clutch is controlled via a control unit as a function of this directly measured pressure within the converter housing. It is important to realize that because the clutch is between the converter pump and the engine, in

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a slipping condition of this clutch, it is not possible to detect the speed of the converter pump and, therefore, it is not possible to calculate the converter pressure. The only way is to determine the pressure inside the converter housing and then control the pressure of the clutch as a function of this pressure.

Claim 16 has been slightly amended to include the specific feature "wherein a pressure within the converter housing (1) is fed via a tapping point in the converter housing adjacent the piston to a hydraulic control unit, which controls an actuation pressure of the clutch (2) as a function of the pressure within a converter housing (1)". Again, even a combination of the references, if possible, does not disclose, teach or suggest at least this feature of the presently claimed invention.

In addition to the above amendments, the Applicant has added independent claim 18 which is believed to clearly define the structure and function of the presently claimed invention and differentiate it from the provided the noted references. In particular, claim 18 includes the feature of "a pressure sensor (12) directly connected with an inner space of the converter housing via a fluid passage to determine a pressure inside the converter housing (1) and regulate the applied clutch pressure as a function of the pressure inside the converter housing". This specific structure and elements is also not disclosed, taught or suggested by the references either alone or in combination and thus the Applicant believes the new claims 18-24 to be allowable as well.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised obviousness rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Allen et al. '417 and JP '906 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such

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teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejections should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



Scott A. Daniels, Reg. No. 42,462
Customer No. 020210
Davis & Bujold, P.L.L.C.
Fourth Floor
500 North Commercial Street
Manchester NH 03101-1151
Telephone 603-624-9220
Facsimile 603-624-9229
E-mail: patent@davisandbujold.com